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Document Name: SAE J571: Dimensional Specification for Sealed Beam Headlamp Units

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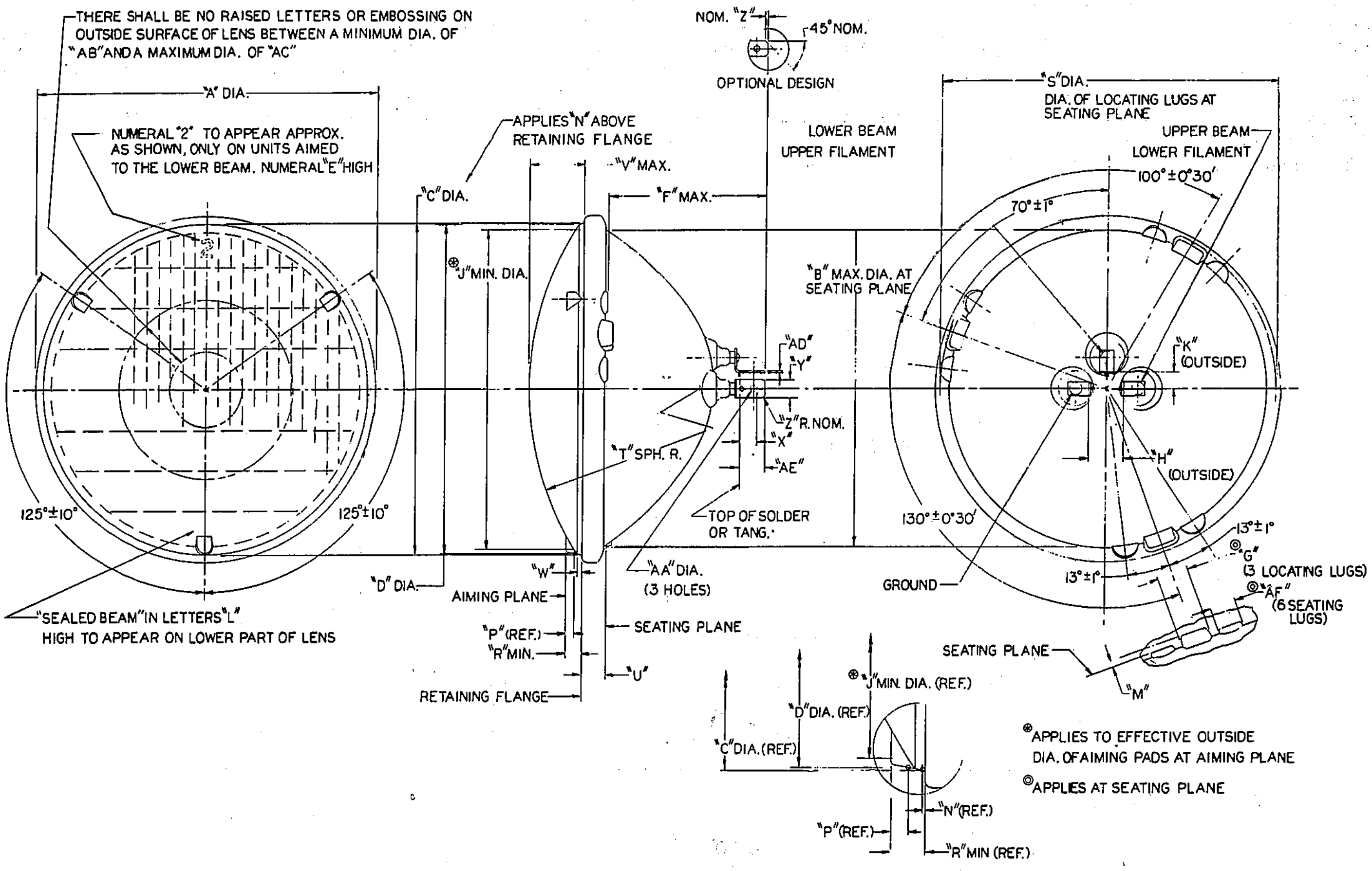
DIMENSIONAL SPECIFICATIONS FOR SEALED BEAM HEADLAMP UNITS—SAE J571d

SAE Standard

Report of Lighting Division approved February 1940 and last revised by Lighting Committee February 1975. Editorial change June 1976.


THERE SHALL BE NO RAISED LETTERS OR EMBOSSING ON OUTSIDE SURFACE OF LENS BETWEEN A MINIMUM DIA. OF "AB" AND A MAXIMUM DIA. OF "AC"
"A" DIA.
NUMERAL "2" TO APPEAR APPROX. AS SHOWN, ONLY ON UNITS AIMED TO THE LOWER BEAM. NUMERAL "E" HIGH
125°±10°
125°±10°
"SEALED BEAM" IN LETTERS "L" HIGH TO APPEAR ON LOWER PART OF LENS
APPLIES "N" ABOVE RETAINING FLANGE
"C" DIA.
"V" MAX.
"F" MAX.
® "J" MIN. DIA.
"T" SPH. R.
"D" DIA.
"W"
AIMING PLANE
"P" (REF.)
"R" MIN.
RETAINING FLANGE
SEATING PLANE
"U"
"AA" DIA. (3 HOLES)
TOP OF SOLDER OR TANG.
NOM. "Z"
45° NOM.
OPTIONAL DESIGN
LOWER BEAM UPPER FILAMENT
"B" MAX. DIA. AT SEATING PLANE
"AD"
"Y"
"Z" R. NOM.
"X"
"AE"
® "J" MIN. DIA. (REF.)
"D" DIA. (REF.)
"C" DIA. (REF.)
"N" (REF.)
"P" (REF.)
"R" MIN (REF.)
® "S" DIA. DIA. OF LOCATING LUGS AT SEATING PLANE
UPPER BEAM LOWER FILAMENT
100°±0°30′
70°±1°
"K" (OUTSIDE)
"H" (OUTSIDE)
130°±0°30′
GROUND
13°±1°
13°±1°
◎ "G" (3 LOCATING LUGS)
◎ "AF" (6 SEATING LUGS)
SEATING PLANE
"M"
®APPLIES TO EFFECTIVE OUTSIDE DIA. OF AIMING PADS AT AIMING PLANE
◎APPLIES AT SEATING PLANE

DIMENSIONS

Letter	in	mm	Letter	in	mm
A	$7.031^{+0.000}_{-0.109}$	$178.58^{+0}_{-2.76}$	S	$6.770^{+0.000}_{-0.040}$	$171.95^{+0}_{-1.01}$
B	6.380	162.05	T	$6.000^{+0.250}_{-0.000}$	$152.40^{+6.35}_{-0}$
C	$6.687^{+0.000}_{-0.030}$	$169.84^{+0}_{-0.76}$	U	0.500 ± 0.040	12.70 ± 1.01
D	6.595 – 6.675	167.52 – 169.54	V	1.150	29.21
E	3/8 ± 1/32	9.52 ± 0.79	W	$0.078^{+0.062}_{-0.000}$	$1.98^{+1.57}_{-0}$
F	3.500	88.90	X	$0.345^{+0.060}_{-0.000}$	$8.76^{+1.52}_{-0}$
G	$0.575^{+0.000}_{-0.025}$	$14.60^{+0}_{-0.63}$	Y	$0.304^{+0.016}_{-0.000}$	$7.72^{+0.40}_{-0}$
H	$0.670^{+0.035}_{-0.000}$	$17.01^{+0.88}_{-0}$	Z	0.06	1.52
J	6.450	163.83	AA	$0.120^{+0.010}_{-0.000}$	$3.04^{+0.25}_{-0}$
K	$0.333^{+0.020}_{-0.000}$	$8.45^{+0.50}_{-0}$	AB	1.50	38.10
L	1/4 ± 1/32	6.35 ± 0.79	AC	3.60	91.44
M	$0.106^{+0.100}_{-0.000}$	$2.69^{+2.54}_{-0}$	AD	0.030 ± 0.002	0.76 ± 0.05
N	0.030	0.76	AE	$0.535^{+0.000}_{-0.070}$	$13.58^{+0}_{-1.77}$
P	0.180	4.57	AF	0.50 ± 0.25	12.70 ± 6.35
R	0.350	8.89			

FIG. 1—SEALED BEAM HEADLAMP UNIT, 7 IN (178 mm) DIAMETER

1. Scope—This standard applies to dimensions for design guidance to assure interchangeability of sealed units, mounting rings or lamp bodies, and retaining rings. It is not intended that this standard be used for compliance. Compliance shall be based on tests specified in other related standards.

2. General Requirements for Sealed Beam Headlamp Units (Figs. 1, 3, 4, 6, and 7).

2.1 For 7 in. (178 mm) and 5¾ in. (146 mm) units there shall be no raised letters or embossing on outside surface of lens between a minimum diameter of 1.50 in. (38.10 mm) and a maximum diameter of 3.60 in. (91.44 mm) about the center of the lens.

2.2 For 4 x 6½ in. (100 x 165 mm) units there shall be no raised letters or embossing on the outside surface of the lens within a maximum diameter of 2.8 in. (71.12 mm) about the center of the lens.

2.3 Manufacturer's name and/or trade mark shall appear on lens.

2.4 "Sealed Beam" in letters ¼ ± 1/32 in. (6.35 ± 0.71 mm) high shall appear on lens.

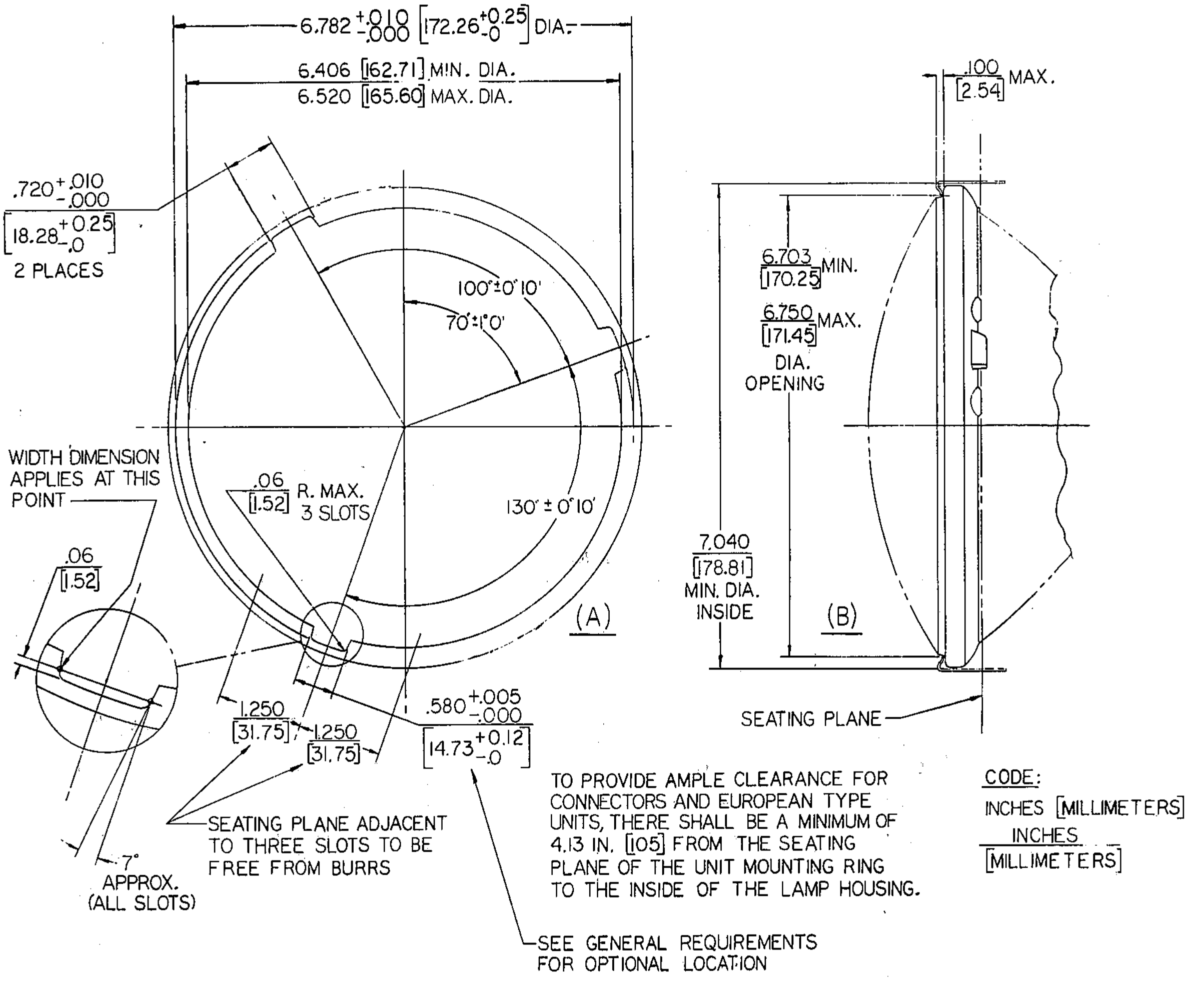
2.5 The face of letters, numbers, or other symbols molded on the surface of the lens, shall not be raised more than 0.020 in. (0.508 mm).

2.6 Trade number and voltage shall be marked on the unit.

2.7 Aiming pad designs may vary but shall meet limiting dimensions as shown.

3. General Requirements for Sealed Beam Headlamp Mounting Rings.

3.1 Mounting rings for 7 in. (178 mm) and 5¾ in. (146 mm) Type 1 and Type 2 (Figs. 2 and 5) have three locating notches, one of which is narrower than the others. The narrow notch is shown in the preferred location at a 7 o'clock orientation. However, the narrow notch may be located at 2 or 11 o'clock.

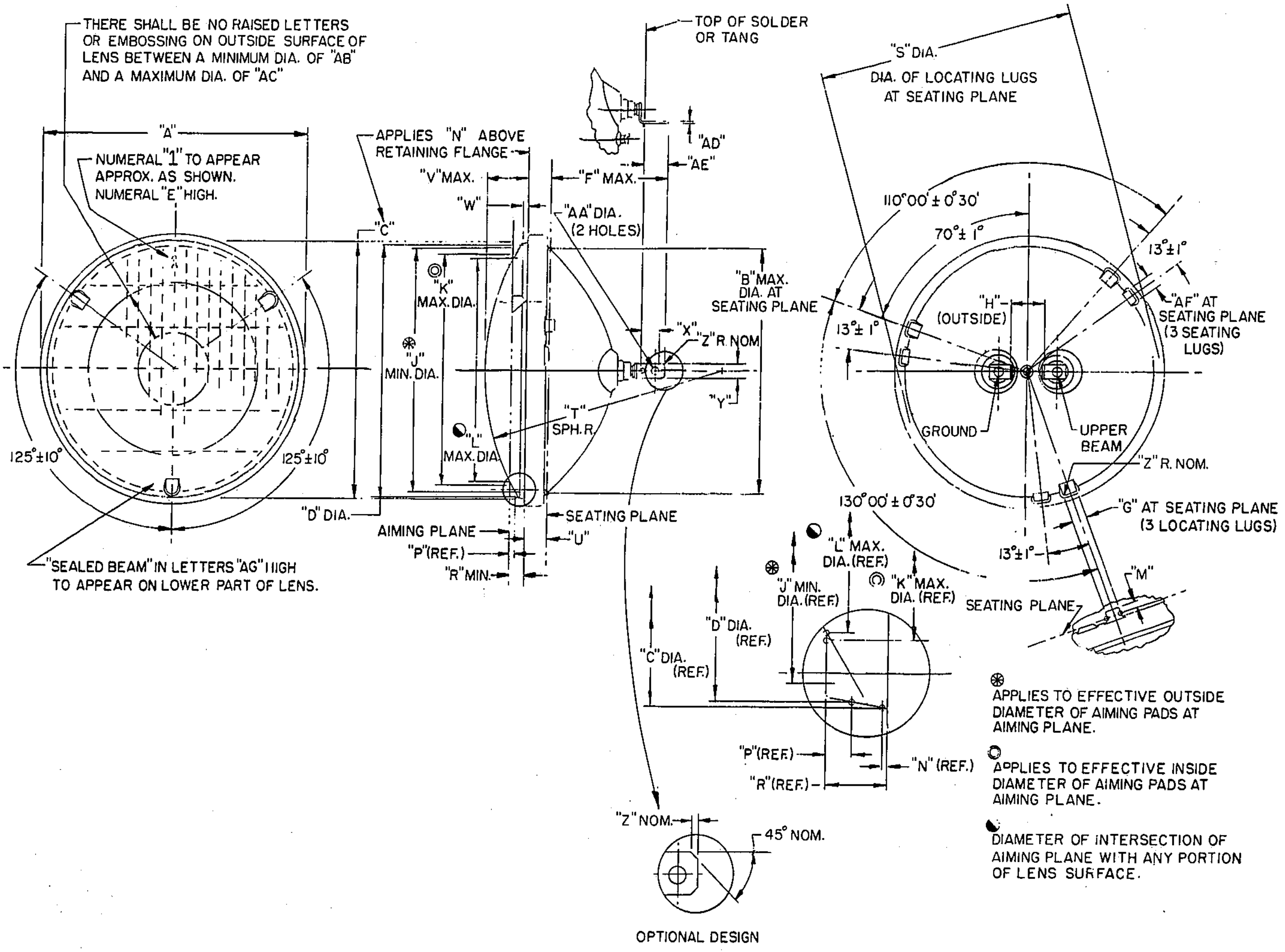


TO PROVIDE AMPLE CLEARANCE FOR CONNECTORS AND EUROPEAN TYPE UNITS, THERE SHALL BE A MINIMUM OF 4.13 IN. [105] FROM THE SEATING PLANE OF THE UNIT MOUNTING RING TO THE INSIDE OF THE LAMP HOUSING.

SEE GENERAL REQUIREMENTS FOR OPTIONAL LOCATION

CODE:
INCHES [MILLIMETERS]
INCHES / [MILLIMETERS]

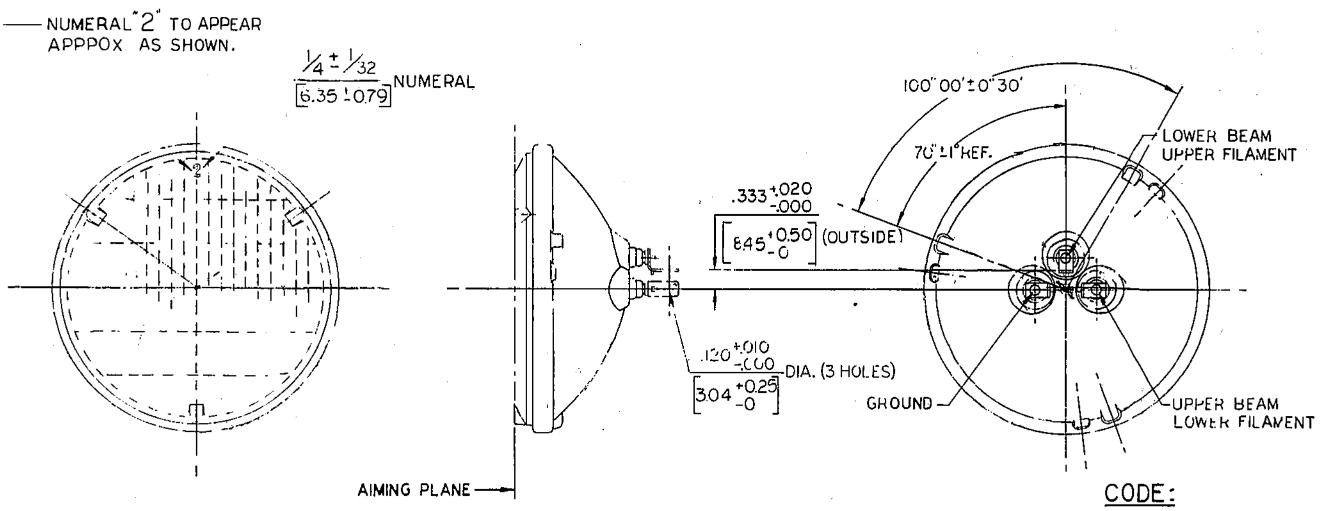
FIG. 2—(A) FRONT VIEW OF SLOT OR NOTCHES FOR 7 IN (178 mm) DIAMETER SEALED BEAM HEADLAMP MOUNTING RING OR LAMP BODY; (B) SEALED BEAM HEADLAMP UNIT RETAINING RING


THERE SHALL BE NO RAISED LETTERS OR EMBOSSING ON OUTSIDE SURFACE OF LENS BETWEEN A MINIMUM DIA. OF "AB" AND A MAXIMUM DIA. OF "AC"
"A"
NUMERAL "1" TO APPEAR APPROX. AS SHOWN. NUMERAL "E" HIGH.
125°±10°
125°±10°
"D" DIA.
"SEALED BEAM" IN LETTERS "AG" HIGH TO APPEAR ON LOWER PART OF LENS.
APPLIES "N" ABOVE RETAINING FLANGE
"V" MAX.
"W"
"C"
"K" MAX. DIA.
"J" MIN. DIA.
"L" MAX. DIA.
AIMING PLANE
"P" (REF.)
"R" MIN.
"AA" DIA. (2 HOLES)
"F" MAX.
TOP OF SOLDER OR TANG
"AD"
"AE"
"B" MAX. DIA. AT SEATING PLANE
"X"
"Z" R NOM
"Y"
"T" SPH. R
SEATING PLANE
"U"
"S" DIA.
DIA. OF LOCATING LUGS AT SEATING PLANE
110°00' ± 0°30'
70° ± 1°
13° ± 1°
13° ± 1°
"H" (OUTSIDE)
"AF" AT SEATING PLANE (3 SEATING LUGS)
GROUND
UPPER BEAM
"Z" R. NOM.
130°00' ± 0°30'
"G" AT SEATING PLANE (3 LOCATING LUGS)
13° ± 1°
"M"
SEATING PLANE
"L" MAX. DIA. (REF.)
"J" MIN. DIA. (REF.)
"K" MAX. DIA. (REF.)
"D" DIA. (REF.)
"C" DIA. (REF.)
"P" (REF.)
"R" (REF.)
"N" (REF.)
"Z" NOM.
45° NOM.
OPTIONAL DESIGN
APPLIES TO EFFECTIVE OUTSIDE DIAMETER OF AIMING PADS AT AIMING PLANE.
APPLIES TO EFFECTIVE INSIDE DIAMETER OF AIMING PADS AT AIMING PLANE.
DIAMETER OF INTERSECTION OF AIMING PLANE WITH ANY PORTION OF LENS SURFACE.

DIMENSIONS

Letter	in	mm
A	$5.700^{+0.000}_{-0.100}$	$144.78^{+0}_{-2.54}$
B	5.120	130.04
C	$5.355^{+0.000}_{-0.030}$	$136.01^{+0}_{-0.76}$
D	5.280 – 5.340	134.11 – 135.63
E	1/4 ± 1/32	6.35 ± 0.79
F	2.60	66.04
G	0.312 ± 0.010	7.92 ± 0.25
H	$0.670^{+0.035}_{-0.000}$	$17.01^{+0.88}_{-0}$
J	5.060	128.52
K	4.57	116.07
L	4.53	115.06
M	$0.100^{+0.050}_{-0.000}$	$2.54^{+1.27}_{-0}$
N	0.030	0.76
P	0.165	4.19
R	0.320	8.12
S	$5.440^{+0.000}_{-0.040}$	$138.17^{+0}_{-1.01}$
T	5.06 ± 0.12	128.52 ± 3.04
U	0.500 ± 0.040	12.70 ± 1.01
V	0.92	23.36
W	$0.078^{+0.062}_{-0.000}$	$1.98^{+1.57}_{-0}$
X	$0.345^{+0.060}_{-0.000}$	$8.76^{+1.52}_{-0}$
Y	$0.304^{+0.016}_{-0.000}$	$7.72^{+0.40}_{-0}$
Z	0.06	1.52
AA	$0.120^{+0.010}_{-0.000}$	$3.04^{+0.25}_{-0}$
AB	1.50	38.10
AC	3.60	91.44
AD	0.030 ± 0.002	0.76 ± 0.05
AE	$0.535^{+0.000}_{-0.070}$	$13.58^{+0}_{-1.77}$
AF	0.31 ± 0.12	7.87 ± 3.04
AG	5/32 ± 1/32	3.96 ± 0.79

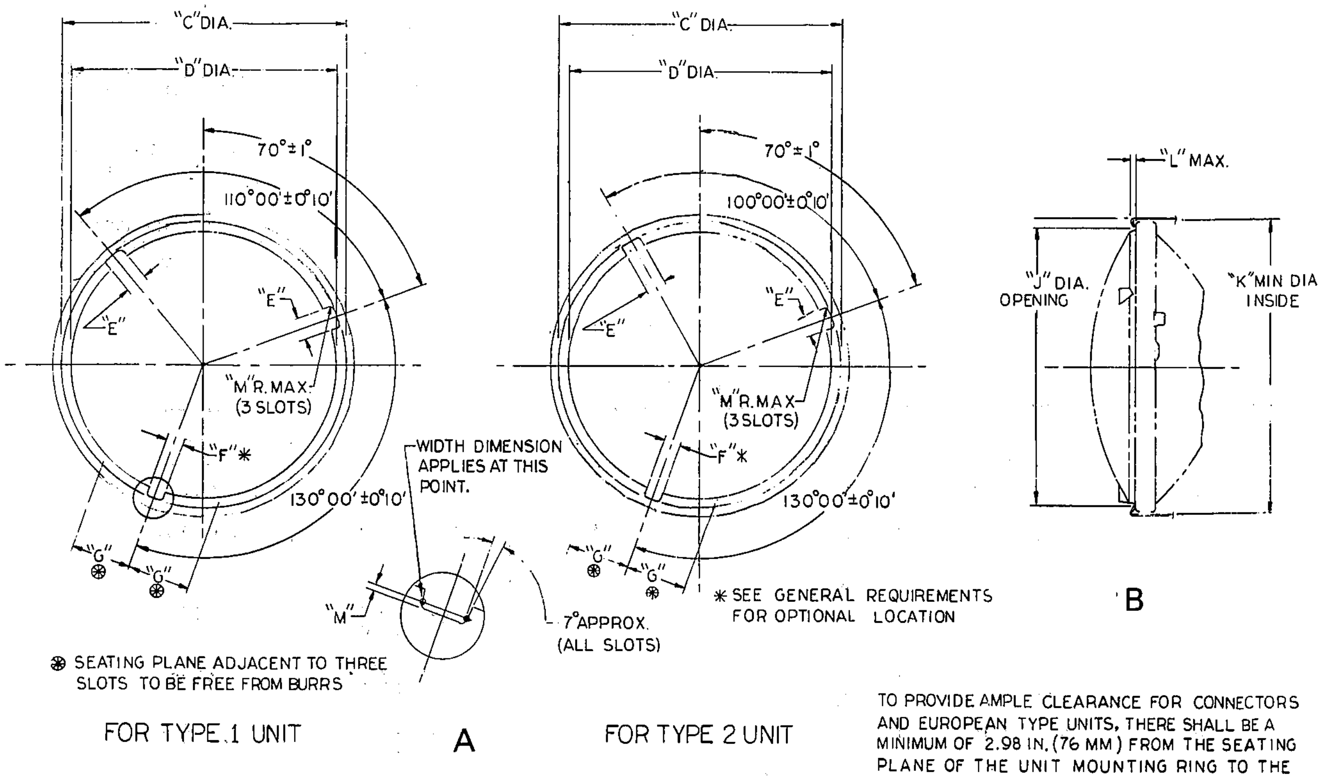
FIG. 3—TYPE 1 SEALED BEAM HEADLAMP UNIT, 5¾ IN (146 mm) DIAMETER


NUMERAL "2" TO APPEAR APPPOX. AS SHOWN.
1/4 ± 1/32 [6.35 ± 0.79] NUMERAL
100°00'±0°30'
70°±1° REF.
LOWER BEAM UPPER FILAMENT
.333 +.020 -.000 [8.45 +0.50 -0] (OUTSIDE)
.120 +.010 -.000 DIA. (3 HOLES) [3.04 +0.25 -0]
GROUND
UPPER BEAM LOWER FILAMENT
AIMING PLANE

NOTE: SAME AS TYPE 1 SEALED BEAM HEADLAMP UNIT, 5 3/4 IN [146] DIAMETER, EXCEPT AS SHOWN.

CODE:
INCHES [MILLIMETERS]
INCHES / [MILLIMETERS]

FIG. 4—TYPE 2 SEALED BEAM HEADLAMP UNIT, 5¾ IN (146 mm) DIAMETER



⊛ SEATING PLANE ADJACENT TO THREE SLOTS TO BE FREE FROM BURRS

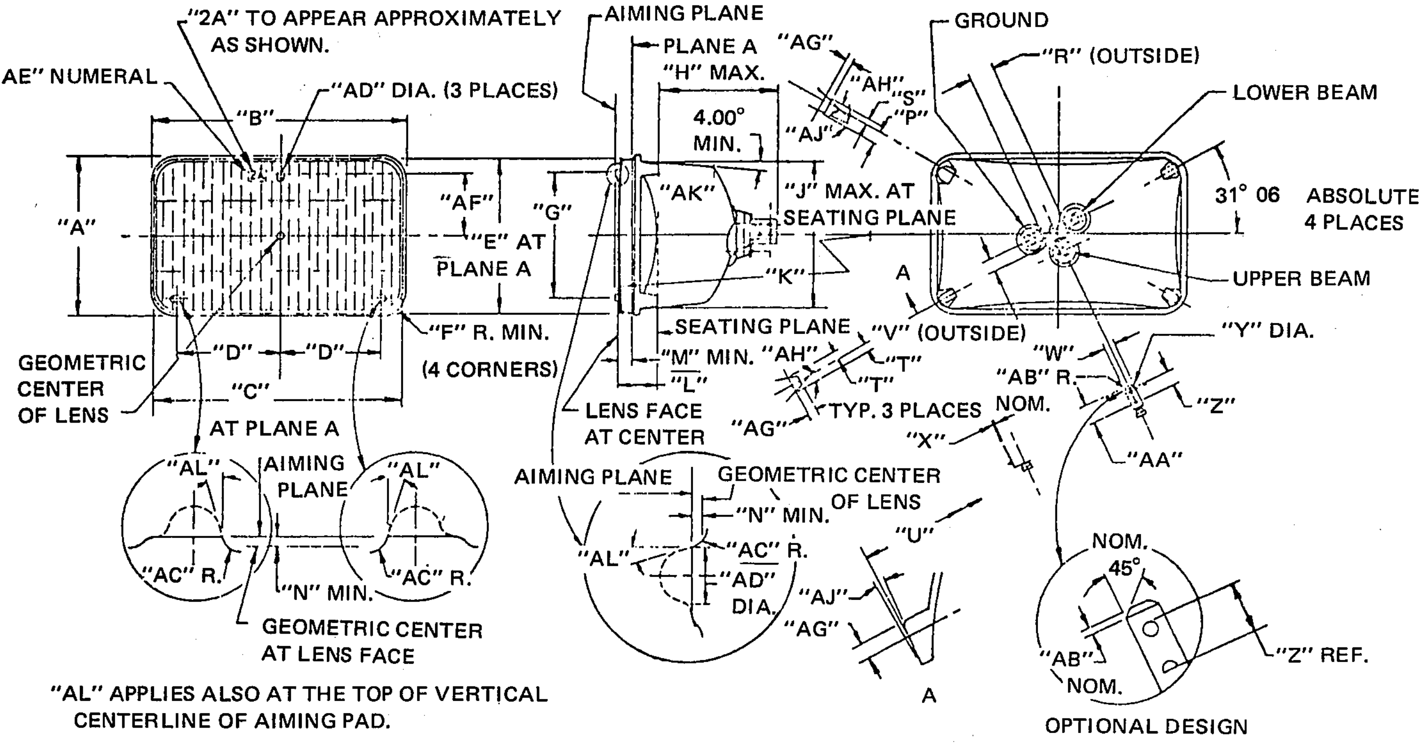
* SEE GENERAL REQUIREMENTS FOR OPTIONAL LOCATION

TO PROVIDE AMPLE CLEARANCE FOR CONNECTORS AND EUROPEAN TYPE UNITS, THERE SHALL BE A MINIMUM OF 2.98 IN. (76 MM) FROM THE SEATING PLANE OF THE UNIT MOUNTING RING TO THE INSIDE OF THE LAMP HOUSING.

DIMENSIONS

Letter	in	mm	Letter	in	mm
C	$5.450^{+0.010}_{-0.000}$	$138.43^{+0.25}_{-0}$	G	1.20	30.48
D	5.250 – 5.140	133.35 – 130.55	J	5.400 – 5.360	137.16 – 136.14
E	$0.410^{+0.010}_{-0.000}$	$10.41^{+0.25}_{-0}$	K	5.710	145.03
			L	0.100	2.54
F	$0.330^{+0.005}_{-0.000}$	$8.38^{+0.12}_{-0}$	M	0.06	1.52

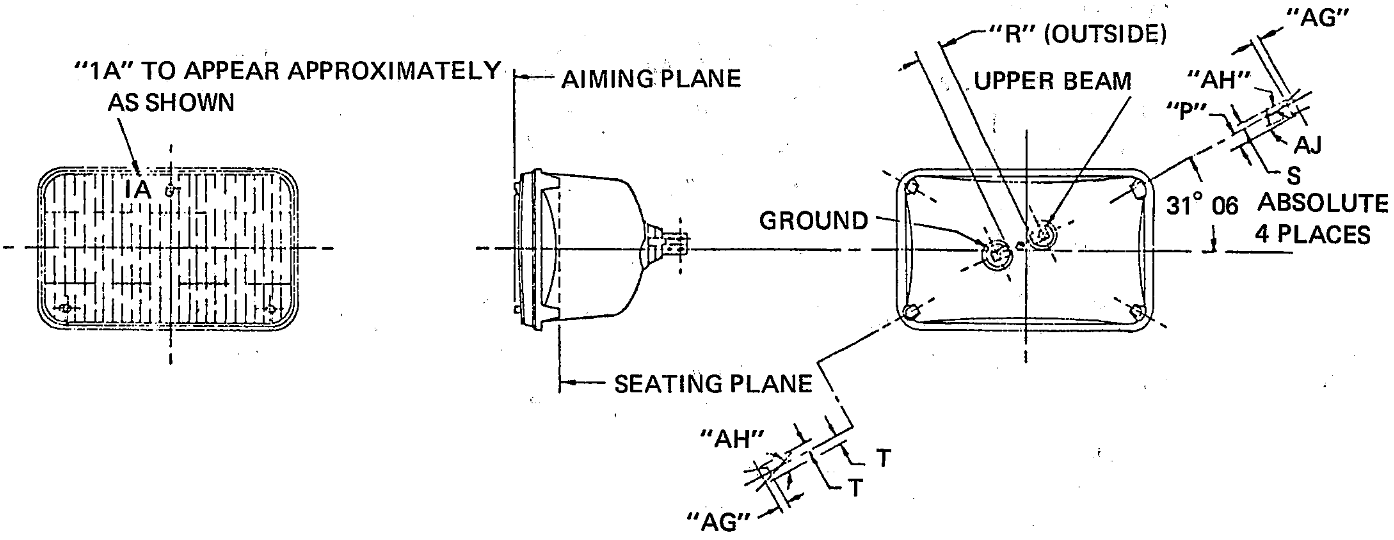
FIG. 5—(A) FRONT VIEW OF SLOTS OR NOTCHES FOR 5¾ IN (146 mm) DIAMETER SEALED BEAM HEADLAMP MOUNTING RING OR LAMP BODY; (B) SEALED BEAM HEADLAMP UNIT RETAINING RING



"AL" APPLIES ALSO AT THE TOP OF VERTICAL CENTERLINE OF AIMING PAD.

Letter	in	mm	Letter	in	mm	Letter	in	mm
A	$4.200^{+0.030}_{-0.170}$	$106.68^{+0.76}_{-4.32}$	P	$0.313^{+0.015}_{-0.010}$	$7.95^{+0.38}_{-0.25}$	AA	$0.535^{+0.000}_{-0.071}$	$13.58^{+0}_{-1.80}$
B	$6.580^{+0.030}_{-0.170}$	$167.13^{+0.76}_{-4.32}$	R	$0.669^{+0.035}_{-0.000}$	$17.02^{+0.88}_{-0.00}$	AB	0.060 ± 0.020	1.5 ± 0.5
C	6.440 ± 0.030	163.58 ± 0.76	S	0.122 ± 0.015	$3.10^{+0.38}_{-0.25}$	AC	0.060 ± 0.020	1.5 ± 0.5
D	2.700 ± 0.020	68.58 ± 0.51	T	0.167 ± 0.010	4.24 ± 0.25	AD	0.200 ± 0.010	5.08 ± 0.25
E	4.060 ± 0.030	103.12 ± 0.76	U	3.640 ± 0.010	92.47 ± 0.25	AE	0.250 ± 0.030	6.35 ± 0.76
F	0.540	13.71	V	$0.335^{+0.020}_{-0.000}$	$8.5^{+0.5}_{-0}$	AF	1.660 ± 0.010	42.16 ± 0.25
G	3.320 ± 0.030	84.33 ± 0.76	W	$0.304^{+0.016}_{-0.000}$	$7.72^{+0.40}_{-0.00}$	AG	0.160 ± 0.010	4.06 ± 0.25
H	3.350	85.09	X	0.030 ± 0.002	0.76 ± 0.05	AH	15.00° ± 3.00°	
J	4.01	101.85	Y	$0.120^{+0.010}_{-0.000}$	$3.05^{+0.25}_{-0}$	AJ	3.33° min	
K	$50.000^{+0.500}_{-2.00}$	$1270.0^{+13.0}_{-50.8}$	Z	$0.345^{+0.059}_{-0.000}$	$8.76^{+1.50}_{-0}$	AK	1.56° max	39.6 max
L	1.375 ± 0.040	34.93 ± 1.02				AL	16° max	
M	0.420	10.68				AM	32° min	
N	0.020	0.51						

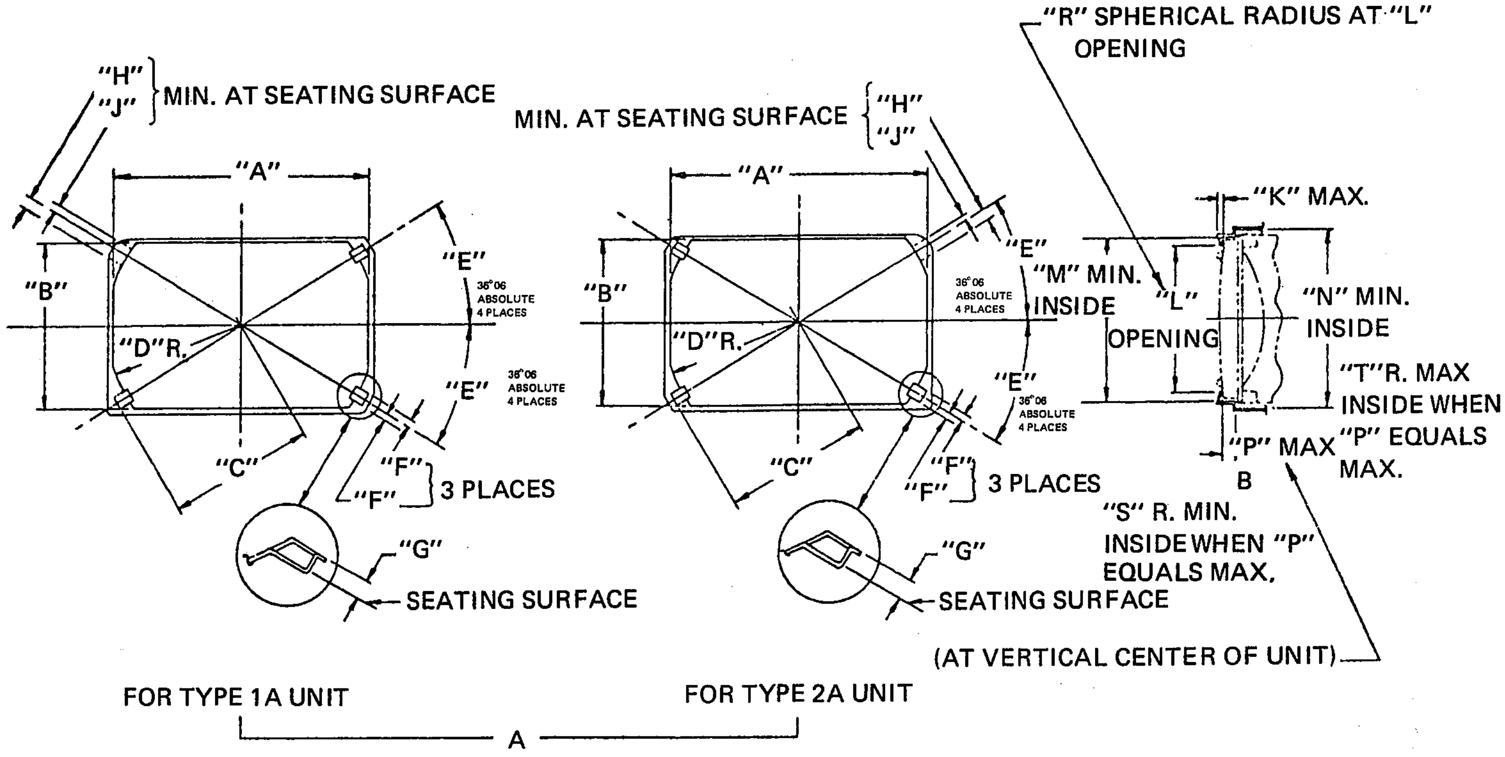
FIG. 6—TYPE 2A SEALED BEAM HEADLAMP UNIT 4 × 6½ IN (100 × 165 mm) RECTANGULAR UNIT



NOTE: SAME AS TYPE 2A
EXCEPT AS SHOWN

Letter	in	mm
G	0.160 ± 0.010	4.064 ± 0.25
R	$0.669\ ^{+0.035}_{-0.000}$	$17.0\ ^{+0.9}_{-0}$
AH	15°00′ ± 3°00′	
T	0.167 ± 0.0100	4.24 ± 0.25
AJ	4°20′ ± 1°00′	
P	$0.313\ ^{+0.015}_{-0.010}$	$7.95\ ^{+0.38}_{-0.25}$
S	$0.122\ ^{+0.015}_{-0.010}$	$3.10\ ^{+0.38}_{-0.25}$

FIG. 7—TYPE 1A SEALED BEAM HEADLAMP UNIT 4 × 6½ (100 × 165 mm) RECTANGULAR UNIT



Letter	in	mm	Letter	in	mm
A	6.518 ± 0.020	165.56 ± 0.50	L	3.660 ± 0.059 × 6.040 ± 0.059	92.96 ± 1.50 × 153.42 ± 1.50
B	4.140 ± 0.020	105.16 ± 0.50			
C	$3.670 \begin{smallmatrix} +0.015 \\ -0.000 \end{smallmatrix}$	$93.218 \begin{smallmatrix} +0.37 \\ 0.00 \end{smallmatrix}$	M	4.080 × 0.46	103.64 × 164.10
D	3.408 ± 0.020	87.00 ± 0.50	N	4.25 × 6.63	107.95 × 168.40
E	31.10° ± 0.08°		P	0.418	10.62
F	$0.178 \begin{smallmatrix} +0.020 \\ -0.000 \end{smallmatrix}$	$4.52 \begin{smallmatrix} +0.51 \\ -0.00 \end{smallmatrix}$	R	$50.0 \begin{smallmatrix} +0.50 \\ -2.00 \end{smallmatrix}$	$1270.0 \begin{smallmatrix} +13.0 \\ -50.8 \end{smallmatrix}$
G	$0.170 \begin{smallmatrix} +0.000 \\ -0.030 \end{smallmatrix}$	$4.318 \begin{smallmatrix} +0.00 \\ -0.76 \end{smallmatrix}$	S	0.075	1.91
H	0.334	8.48	T	0.060	1.52
J	0.120	3.05			
K	0.060	1.52			

FIG. 8(A)—FRONT VIEW OF SLOTS OR NOTCHES FOR 4 × 6½ IN (100 × 165 mm) RECTANGULAR HEADLAMP MOUNTING RING OR LAMP BODY; (B)—RECTANGULAR SEALED BEAM HEADLAMP UNIT RETAINING RING.